BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

As rescanning documents *will not* correct images, please do not report the images to the Image Problem Mailbox.

CLAIMS:

1. An ignition system for a high-frequency high-intensity discharge lamp system, the ignition system being connectable to an output circuit and comprising two first windings wound for substantial flux cancellation and having at least one further winding, the at least one further winding being temporarily energizable during start-up of the circuit and inductively coupled to the first windings for providing a voltage surge across the first windings.

2. The ignition system of claim 1, wherein the output circuit comprises a high-intensity discharge lamp.

3. The ignition system of claim 2, wherein the ignition system has two of the further windings.

4. The ignition system of claim 3, wherein the two further windings produce voltage amplification on the output circuit, and wherein during start-up of the output circuit the ignition system acts as a transformer having the first windings as a pair of secondary windings and the further windings as a pair of primary windings, each primary winding being interwound with or adjacent a respective one of the secondary windings on the same magnetic core.

5. The ignition system of claim 4, wherein a number

of turns of each secondary winding is greater than a number of turns of each primary winding.

6. An ignition system for a high-frequency high-intensity discharge lamp system, the ignition system being connectable to a high-intensity discharge lamp and comprising a pair of primary windings each interwound with a pair of secondary windings, the secondary windings being wound on a common magnetic circuit for substantial flux cancellation, the primary windings being wound for voltage amplification on the output circuit and being temporarily energizable during start-up of the discharge lamp for producing a temporary voltage amplification in the secondary windings.

7. An ignition system for a high-frequency, high-intensity discharge lamp system, the ignition system being connectable to a high-intensity discharge lamp and comprising:

a core;

a pair of primary windings wound on the core for voltage amplification on an output circuit; and,

a pair of secondary windings each interwound with a respective primary winding, one end of each secondary winding being connectable to receive power and the other end being connectable to the discharge lamp, the secondary windings being wound on the core such that the magnetic field from one substantially cancels that from the other, the number of turns of each secondary winding being greater

than the number of turns of each primary winding, wherein voltage amplification is attained by temporarily energizing the primary windings during start-up of the lamp system, and wherein restriction on maximum current flow results from impedance introduced by the secondary windings.

8. The ignition system of claim 1, and also comprising high-frequency ferrite material for partially enclosing leakage flux.

9. The ignition system of claim 2, and means for connecting the discharge lamp across an output of the first windings as said output circuit.

10. The ignition system of claim 7, and means for connecting the discharge lamp across an output of the secondary windings.

11. The ignition system of claim 3, also comprising a ballast circuit connectable across an input of the first windings for producing an alternating-current supply to the discharge lamp for steady-state operation.

12. The ignition system of claim 7, also comprising a ballast circuit connectable across the one end of the secondary windings for producing an alternating-current supply to the discharge lamp for steady-state operation.

13. The ignition system of claim 12, also comprising:

a first resonant circuit for energizing the two primary windings; and,

a second resonant circuit connectable across the one end of the secondary windings;

wherein, during the start-up operation, the first and second resonant circuits are connected to the respective primary and secondary windings and are simultaneously energized, and wherein, during steady-state operation, the ballast circuit is connected to the secondary windings and the first and second resonant circuits are not operative.

14. The ignition system of claim 13, wherein the primary windings are connected in parallel to the first resonant circuit, which first resonant circuit comprises a serially-connected spark gap member and an energizing signal source.

15. The ignition system of claim 14, wherein the energizing signal source is a secondary winding of a transformer.

16. The ignition system of claim 13, wherein the second resonant circuit comprises: a capacitive means connected in parallel with the secondary windings, and an inductive means connected in series with the secondary windings.

17. The ignition system of claim 7, wherein the core comprises a pair of U-shaped cores.

18. The ignition system of claim 17, wherein an insulating tube is fitted over each core before the primary and secondary windings are wound on the core.

19. The ignition system of claim 7, wherein the core is in the form of a ring.

20. A high-frequency high-intensity discharge lamp system comprising the ignition system and the discharge lamp of claim 2.

21. A high-frequency high-intensity discharge lamp system comprising the ignition system and the discharge lamp of claim 6.

22. A high-frequency high-intensity discharge lamp system comprising the ignition system and the discharge lamp of claim 7.